

IT IS CLAIMED:

1. A Hepatitis E Virus (HEV) polypeptide composition, consisting of at least one polypeptide derived from the carboxy-terminal 549 amino acids of HEV open reading frame (ORF) 2.

2. A polypeptide composition of claim 1, where at least one polypeptide contains a carboxy terminal deletion of up to about 24 carboxy terminal amino acids of said 549 amino acid HEV ORF2 polypeptide.

3. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence presented as SEQ ID NO:15 or a homologous sequence thereto.

4. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence presented as SEQ ID NO:16 or a homologous sequence thereto.

5. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence presented as SEQ ID NO:25 or a homologous sequence thereto.

6. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence presented as SEQ ID NO:26 or a homologous sequence thereto.

7. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence

presented as SEQ ID NO:27 or a homologous sequence thereto.

5 8. A polypeptide composition of claim 1, where said composition contains a polypeptide having the sequence presented as SEQ ID NO:28 or a homologous sequence thereto.

10 9. A polypeptide composition of claim 1, where said composition contains two polypeptides having the sequences presented as SEQ ID NO:25 and SEQ ID NO:27, or homologous sequences thereto.

15 10. A polypeptide composition of claim 1, where said composition contains two polypeptides having the sequences presented as SEQ ID NO:26 and SEQ ID NO:28, or homologous sequences thereto.

20 11. A substantially isolated nucleic acid sequence encoding a polypeptide derived from the carboxy-terminal 549 amino acids of HEV open reading frame 2.

25 12. An expression vector for producing a Hepatitis E Virus polypeptide antigen composition, comprising, a nucleic acid sequence encoding a polypeptide derived from the carboxy-terminal 549 amino acids of HEV open reading frame 2, said nucleic acid sequence inserted into an expression vector, where said nucleic acid sequence is operably linked to a promoter able to  
30 initiate transcription in a selected host cell.

35 13. An expression system for producing a Hepatitis E Virus polypeptide antigen composition, comprising, a nucleic acid sequence encoding a polypeptide derived from the carboxy-terminal 549 amino acids of HEV

open reading frame 2, said nucleic acid sequence inserted into an expression vector, wherein said nucleic acid sequence is operably linked to a promoter able to initiate transcription in a selected host cell, and

5        said expression vector is carried within the host cell.

14. An expression system of claim 13, where said expression vector is a baculovirus expression vector and  
10        said host cell is an insect cell.

15. A Hepatitis E Virus (HEV) polypeptide composition produced by a process comprising,  
15        culturing an insect cell containing an expression vector of claim 11 under conditions sufficient to express a polypeptide encoded by said nucleic acid.

16. A composition of claim 15, wherein at least one polypeptide of the composition has an amino acid sequence  
20        selected from the group consisting of SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, and homologous sequences therewith.

17. A Hepatitis E Virus (HEV) polypeptide  
25        composition produced by a process comprising,  
a) obtaining an HEV capsid derived antigen having at least 549 carboxy terminal amino acids of an HEV capsid protein; and  
b) incubating the antigen with a baculoviral  
30        infected lysate under conditions sufficient to cleave carboxy terminal sequences of the HEV capsid derived antigen.

18. A method of producing a Hepatitis E Virus (HEV)  
35        polypeptide composition, comprising the steps of:

culturing a cell containing the expression vector of claim 11 under conditions sufficient to express a polypeptide sequence encoded by said nucleic acid.

5           19. A method of detecting hepatitis E virus infection in an individual, comprising:

a) reacting a serum sample taken from the individual with the Hepatitis E Virus (HEV) polypeptide composition of claim 1; and

10           b) examining a polypeptide of the composition for the presence of bound antibody.

15           20. The method of claim 18, wherein polypeptides of the HEV polypeptide composition are attached to a solid support, said reacting includes contacting such serum with the support and said examining includes reacting the support and bound antibody with a reporter-labeled anti-human antibody.

20           21. A kit for ascertaining the presence of antibodies to HEV in a serum sample taken from an individual, comprising:

25           a solid support with surface-bound antigens wherein the surface-bound antigens are polypeptides of the HEV polypeptide composition of claim 1.

30           22. A vaccine composition used in immunizing an individual against Hepatitis E Virus (HEV) comprising, an HEV polypeptide composition of claim 1 in a pharmacologically acceptable carrier.

35           23. A vaccine composition of claim 22, where at least one polypeptide of the composition has an amino acid sequence selected from the group consisting of SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:25, SEQ ID NO:26, SEQ

ID NO:27, SEQ ID NO:28, and homologous sequences therewith.

- 5           24. A method of inhibiting infection of an individual by HEV, comprising:  
            administering to the subject a vaccine composition of claim 22 in a therapeutically effective amount.

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